

TECHNICAL SPECIFICATIONS

WASHINGTON STATE FERRIES

M.V. SPOKANE DRYDOCKING

CONTRACT NO. 00-7066

TECHNICAL SPECIFICATIONS

TABLE OF CONTENTS

<u>ITEM</u>	<u>PAGE</u>
1. DRYDOCK VESSEL.....1 {MAINTENANCE}	1
2. TEMPORARY SERVICE.....1 {MAINTENANCE}	1
3. SEA CHEST AND ANODE INSPECTION2 {MAINTENANCE}	2
4. SEA STRAINER BOX INSPECTION AND PRESERVATION3 {MAINTENANCE}	3
5. SEA VALVES.....3 {MAINTENANCE}	3
6. RUDDER INSPECTION, NO. 1 AND NO. 2 ENDS5 {MAINTENANCE}	5
7. PROPELLER INSPECTION AND REMOVAL, NO. 1 AND NO. 2 ENDS5 {MAINTENANCE}	5
8. OUTER SHAFT SEAL REPLACEMENT, NO. 1 AND NO. 2 ENDS6 {MAINTENANCE}	6
9. ROPE GUARD AND ZINC REPLACEMENTS, NO. 1 AND NO. 2 ENDS7 {MAINTENANCE}	7

<u>ITEM</u>	<u>PAGE</u>
10. VOID TANKS INSPECTION.....7 {MAINTENANCE}	7
11. FRESH WATER WASH OF VESSEL HULL AND GUARD7 {MAINTENANCE}	7
12. PREPARATION OF VESSEL HULL FOR BLASTING8 {MAINTENANCE}	8
13. BLASTING OF THE GUARD AND ANTI-CORROSION COATING.....8 {MAINTENANCE}	8
14. PAINTING OF VESSEL GUARD, FULL COAT9 {MAINTENANCE}	9
15. BLASTING OF THE HULL BELOW THE GUARD AND ANTI-CORROSION COATING.....9 {MAINTENANCE}	9
16. PAINTING OF VESSEL HULL, ABOVE WATERLINE9 {MAINTENANCE}	9
17. PAINTING OF VESSEL HULL, BELOW WATERLINE ANTI-FOULING (SPOT COAT)10 {MAINTENANCE}	10
18. PAINTING OF VESSEL HULL, BELOW WATERLINE, ANTI-FOULING (FULL COAT).....10 {MAINTENANCE}	10
19. DRAFT AND HULL MARKINGS10 {MAINTENANCE}	10
20. CAPASTIC REPAIR.....10 {MAINTENANCE}	10
21. TREATMENT TANK REPLACEMENT OF COVER PLATE STUDS11 {MAINTENANCE}	11
22. INSPECTION OF NO.1 AND NO.2 END COOPER BEARINGS.....11 {MAINTENANCE}	11
23. NO.1 AND NO.2 END COOPER BEARINGS.....12 {MAINTENANCE}	12

<u>ITEM</u>	<u>PAGE</u>
24. INSTALLATION OF WALKOFF MATS13 { MAINTENANCE}	
25. DATA LOGGING STEERING SYSTEM.....14 {MAINTENANCE}	
26. DECK HATCH DRAIN INSTALLATION.....15 {MAINTENANCE}	

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TECHNICAL SPECIFICATIONS

For the following Technical Specifications, the Contractor is to provide all labor, material and equipment to accomplish each and every Bid Item unless otherwise specified.

The Specification Item sub-titles in brackets are for WSF internal use only, for Life Cycle Cost modeling. Bidders should ignore such bracketed sub-titles.

1. DRYDOCK VESSEL

{MAINTENANCE}

M.V. SPOKANE Vessel Particulars:

Length: 440' 0", Beam: 87' 0", Draft: 18' 0", Gross Tons: 3,246

- A. Drydock Vessel for cleaning, painting, inspections, and the work specified herein and any necessary repairs.
- B. Block spacing shall be at twelve foot (12') centers. **Attachment No. 2**, "Blocking Arrangement" is provided to show previous blocking position used.
- C. Within twenty-four (24) hours of Drydocking the Vessel, provide three (3) copies of the Blocking drawing to the WSF Inspector indicating the block positions used.

2. TEMPORARY SERVICE

{MAINTENANCE}

- A. Install one (1) telephone on board in a location designated by the Vessel Staff Chief Engineer. The telephone is to have one (1) outside line with toll-free access to Seattle and vicinity and, if different, one (1) line for local numbers. The telephone shall have touch-tone service if available from the Contractor's telephone system.

- 1 B. Provide and/or maintain electricity, potable water, sewage removal, safe
2 lighted gangway, and trash removal services while Vessel is in the
3 Contractor's facility.
- 4 C. Provide safety and security for the entire Vessel throughout this contract
5 period until such time as the WSF Representative has accepted re-delivery of
6 the Vessel. Every reasonable precaution shall be taken to protect the Vessel
7 from the hazards of fire, flooding, pilferage, malicious damage, and other
8 events including cataclysmic phenomena of nature.
- 9 D. Provide and maintain comprehensive and effective fire prevention and fire
10 detection, and fire fighting programs and systems sufficient to ensure the
11 safety and integrity of the Vessel. Provide personnel trained in shipboard fire
12 fighting techniques and also trained to cooperate with and assist local fire
13 fighting organizations. Provide sufficient shore fire hoses to ensure an
14 adequate supply of fire fighting water, at sufficient pressure, and maintain an
15 adequate number of tested fire-hoses aboard the Vessel to effectively fight
16 fires at any location in the Vessel.
- 17 E. Provide and maintain portable fire extinguishers in sufficient quantity, and of
18 the appropriate type, to combat local fires of any class. Provide sufficient fire
19 watches, including roving watches as may be required, to ensure that fires that
20 may be inadvertently started by welding sparks or heat, electrical malfunction,
21 or spontaneous combustion are detected, reported and promptly extinguished.

22 **3. SEA CHEST AND ANODE INSPECTION**

23 {MAINTENANCE}

- 24 A. Open the four (4) anode covers located on top of the sea chests for inspection
25 by the WSF Inspector and Vessel Staff Chief Engineer. (The covers weigh
26 approximately 150 lbs. each, and requires that two (2) electrical leads from
27 each anode, be disconnected prior to anode removal and reconnected upon
28 installing anode). Protect deck from damage during this work Item.
- 29 B. Remove existing anodes from the plates and sea chest (8 anodes total, 4 per
30 end (2 copper and 2 aluminum per end). Install new WSF supplied anodes.
31 Close-up access plates using Contractor furnished new gaskets and grommets.

32 **NOTE:**

33 For purposes of bidding assume that **25 Square Feet** of each Sea Chest, including
34 cover plates, will require SSPC-SP 3, Power Tool Cleaning. The Contract will be
35 adjusted upward or downward to account for the actual scope authorized by the WSF
36 Inspector.

- 37 C. Apply two (2) coats of INTERNATIONAL Intertuf 262 Series epoxy, (first
38 coat Red/second coat Buff), to a minimum of 5 mils (DFT) each coat to all
39 prepared surface areas repaired in this Item.

- 1 D. Install new WSF supplied anodes and close up access plates using new
2 gaskets and grommets.
- 3 E. Inspect for water leakage of covers and new anodes. Any leakage will be
4 repaired at the Contractors expense.

5 **4. SEA STRAINER BOX INSPECTION AND PRESERVATION**
6 {MAINTENANCE}

- 7 A. Open the Port and Starboard sea strainer boxes for inspection of guide rails,
8 screens and other internal fittings. Submit (3) copies of a report on the
9 condition of the box and strainer plates to the WSF Inspector.

10 **NOTE:**

11 For purposes of bidding assume that **25 Square Feet** of each Strainer Box, including
12 cover plates, will require SSPC-SP 3, Power Tool Cleaning. The Contract will be
13 adjusted upward or downward to account for the actual scope authorized by the WSF
14 Inspector.

- 15 B. Mechanically clean the interiors, exteriors, and covers of the strainer boxes to
16 SSPC-SP3, Power Tool Cleaning and apply two (2) coats of
17 INTERNATIONAL Intertuf 262 Series epoxy, (first coat Red/second coat
18 Buff), to a minimum of 5 mils (DFT) each coat.
- 19 C. Close up access plates using new gaskets and grommets.
- 20 D. Inspect for water leakage. Any leakage will be repaired at the Contractor's
21 expense.

22 **5. SEA VALVES**
23 {MAINTENANCE}

- 24 A. Open, or remove as required, the below listed sea valves; clean, blue and
25 inspect for proper water tightness (valve disk to valve seat contact), including
26 valve stems. All valves two inch (2") and under shall be replaced with new
27 Contractor furnished valves, the removed valves shall be left with the Vessel
28 Staff Chief Engineer.

1 **FOR THE M.V. SPOKANE:**

2	QTY	SERVICE	SIZE	TYPE
3	2	Sea Chest	16"	Gate
4	4	Main Engine Sea Supply	6"	Gate
5	2	Main Engine Overboard	8"	Globe
6	1	Vital Generator Supply	3"	Gate
7	1	Vital Overboard	2½"	Stop Check
8	2	No. 1 & No. 2 S/S Generator Supply	6"	Butterfly
9	2	No. 1 & No. 2 S/S Generator Overboard	5"	Globe stop check
10	1	Air Conditioner	2"	Gate
11	1	Bilge supply	5"	Butterfly
12	1	Firemain supply	6"	Gate
13	1	Firemain Overboard	5"	Stop Check
14	2	Sea chest vents	2"	Gate
15	2	Treatment Tank	16"	Butterfly
16	1	Bilge Overboard	6"	Stop Check

17 **NOTE:**

- 18 The cross braces under No. 2 and No. 3 Main Engines will require removal to allow
19 the removal of the sixteen inch (16") valve sea chest valves, if required.
- 20 B. Overhaul and furnish all required new parts for the 5-inch Bilge Overboard
21 stop check valve.
- 22 C. Overhaul and furnish all required new parts for the Reach Rod Gear box on
23 the Port side, sixteen inch (16") Butterfly Valve of the Treatment tank.
- 24 D. Sea valves shall be inspected by the WSF and USCG Inspectors, and Vessel
25 Staff Chief Engineer for the following:
- 26 a. General material condition.
- 27 b. Valve disk to valve seat contact.
- 28 c. Proper mechanical operation.
- 29 E. Prior to installation, hydrostatically test all new and reconditioned valves to
30 the satisfaction of the WSF Inspector, USCG Inspector and Vessel Staff Chief
31 Engineer.
- 32 F. Provide three (3) written copies of the report of test, inspection, all repairs to
33 existing valves and all new valves installed to the WSF Inspector.
- 34 G. Inspect for water leakage prior to launching. Any leakage will be repaired at
35 the Contractor's expense.

1 **6. RUDDER INSPECTION, NO. 1 AND NO. 2 ENDS**

2 {MAINTENANCE}

- 3 A. Erect staging or provide suitable man lifting device on both sides of No. 1 and
4 No. 2 End Rudders for inspection. Remove staging upon completion of all
5 affiliated work.
- 6 B. Drain and pressure-test rudders for leaks in the presence of the WSF and
7 USCG Inspectors and the Vessel Staff Chief. Test pressure shall be forty-two
8 inches (42") of water with Manometer, or 1.5 PSI on acceptable calibrated
9 pressure gage that has 1.5 PSI at mid scale range within forth-eight (48) hours
10 of drydocking the Vessel. Accepted test will be no leaks for one (1) hour.
11 Provide three (3) copies of the test results to the WSF Inspector within
12 twenty-four (24) hours upon completion of the test/inspection.
- 13 C. Take and record clearances of rudder pintle and rudderstock bearings on No. 1
14 and No. 2 End Rudders within forth-eight (48) hours of drydocking the
15 Vessel. Provide three (3) copies of a written report of findings to the WSF
16 Inspector within twenty-four (24) hours upon completion of test/inspection.

17 **7. PROPELLER INSPECTION AND REMOVAL, NO. 1 AND NO. 2 ENDS**

18 {MAINTENANCE}

- 19 A. Erect and modify staging as required, in area around No. 1 and No. 2 End
20 Propellers to accomplish all affiliated work and required inspections in this
21 Item. Remove staging upon completion of all affiliated work and inspections.
- 22 B. Polish the No. 1 and No. 2 End Propellers by power disk sanding using 80 grit
23 or finer abrasive.
- 24 C. Remove No. 1 and No. 2 End Propellers.
- 25 D. Transport to and from Sound Propeller, Seattle Washington, 98107-4696,
26 Telephone No. (206) 782-9190, for inspections and Repair. Measure and
27 record "draw up" position of propeller, prior to removal for reference at
28 reinstallation.
- 29 E. Clean the Propeller blades, Propeller Hubs, Propeller Bores and Keyways,
30 Propeller Shaft tapers, Shaft key ways, Propeller Shaft nuts and Keys for
31 Nondestructive Dye Penetrant test/Inspection.
- 32 F. Perform a Nondestructive Dye Penetrant test/inspection of all Items specified
33 in paragraph (E) for cracks and/or any defects.
- 34 G. Conduct Test for Pitch and balance of blades and hubs.
- 35 H. Provide three (3) written copies of results from all inspections, test and repairs
36 by the Contractor or the Repair facility to the WSF Inspector. Reports will be
37 provided within twenty-four (24) hours of completion of each event.

- 1 I. Reinstall propellers, propeller keys and shaft nuts. Nut hardening to be
2 witnessed by the WSF Inspector, USCG Inspector, and the Vessel Staff Chief
3 Engineer.

4 **8. OUTER SHAFT SEAL REPLACEMENT, NO. 1 AND NO. 2 ENDS**
5 **{MAINTENANCE}**

6 **NOTE:**

7 Both the No. 1 and No. 2 End Propellers will require removal (propellers removed in
8 Item No. 7) to accomplish the required work in this Item.

- 9 A. Erect, modify, and remove staging in the area around No. 1 and No. 2 End
10 Propellers as required to accomplish all affiliated work and inspections.
- 11 B. Remove the Outer Waukesha Seals and Liners. Replace with new WSF
12 supplied Outer Eagle Seals and Liners. Provide the services of an authorized
13 Eagle Seal service Representative during the installation of the new Seals and
14 Liners. The Eagle Seal Representative is, Sound Propeller 1608 Fairview
15 Ave. E., Seattle, WA. 98102, Phone No. (206)-325-5722.
- 16 C. Drain all oil from the outer Waukesha oil seal system, including the stern tube
17 cavity. Dispose of oil (approximately 350 gallons, each end). Clean the head
18 tank and the bilge sump tank. Flush the piping from the head tank to the bilge
19 sump tank by using ten (10) gallons of clean system oil poured down the
20 piping from the head tank to the bilge sump tank. Clean flushing oil from the
21 bilge sump tank. Close up the head tank and sump tank with new Contractor
22 furnished fasteners and gaskets.
- 23 D. Using a feeler gauge take stern tube bearing clearances. Exercise care with
24 the feeler gauge so as not to break off leaves in the bearing. Submit three (3)
25 copies of a written report of the readings to the WSF Inspector.
- 26 E. Install WSF furnished Eagle Seals and Liners. Take Eagle Seals bearing wear
27 down readings after installation of new bearing and liners, in the presence of
28 the WSF Inspector and the Vessel Staff Chief Engineer. Submit three (3)
29 copies of the written reports of the readings to the WSF Inspector. Upon
30 completion of taking wear down readings, lock wire the liner and housing
31 fasteners. Fill the outer seal with Hyperlube or STP.
- 32 F. Take run out readings on the face of the propeller and the counter bore for the
33 seal. Dial in the outboard liner after propeller installation, run out not to
34 exceed .005". Reading to be witnessed by the WSF Inspector and the Vessel
35 Staff Chief Engineer. Submit three (3) copies of a written report of the
36 readings to the WSF Inspector.
- 37 G. Fill the stern tube system with WSF furnished oil.

- 1 H. Transport the removed outer Waukesha Seals and Liners to the WSF
2 Warehouse at 6th Ave. South, Seattle, WA. Inform the WSF Inspector twenty-
3 four (24) hours prior to transporting. Provide the WSF Inspector with three
4 (3) copies of the inventory list of transported equipment.

5 **9. ROPE GUARD AND ZINC REPLACEMENTS, NO. 1 AND NO. 2 ENDS**
6 {MAINTENANCE}

- 7 A. Remove the existing rope guards and zincs from the No. 1 and No. 2 Ends and
8 replace them with new contractor furnished rope guards and zincs, (one (1)
9 six inch (6") by twelve inch (12") zinc cut in half for each rope guard half)
10 welded to the inside of the rope guards. Staging is included in the Propeller
11 Inspection Item.
- 12 B. Prepare and paint the rope guards using the below the water line painting
13 system.

14 **10. VOID TANKS INSPECTION**
15 {MAINTENANCE}

16 **NOTE:**

17 On M.V. Spokane there are six (6) Void spaces. The Vessel Crew will open and
18 close the covers. The Contractor will provide the Vessel Crew with new Cotton
19 Grommets.

- 20 A. Provide the services of a marine chemist to certify Voids "SAFE FOR
21 WORKERS". Provide lighting and ventilation as necessary to facilitate the
22 USCG inspection and any other work to be performed in the Voids.

23 **11. FRESH WATER WASH OF VESSEL HULL AND GUARD**
24 {MAINTENANCE}

- 25 A. Within twenty-four (24) hours of drydocking Vessel, perform a Low-Pressure
26 Water Cleaning (LP WC) at 3,000-3,500 PSI. in accordance with SSPC-SP
27 12/NACE 5. The wand shall be held no more than twelve inches (12") from
28 the surface being washed. The entire Hull from the top of the Guard to the
29 Keel, including, flat keel, all horizontal and vertical surfaces of the guard,
30 rudders, sea chests, sea chest strainers, propellers shall be washed. The wash
31 shall leave no visible growth or residue after the hull dries from washing.
- 32 B. Sea chest strainer plates shall be removed for cleaning, preparation and
33 painting and reinstalled upon completion of all related work and inspection.

PAINTING OF VESSEL AND HULL PRESERVATION

Special Note

(ATTACHMENT NO. 1)

Area Preparation, Surface Preparation, Grit Blasting, Paint Coatings, and Inspection for Vessel's hull, curtain plates, casing and super structure shall be in accordance with Washington State Ferries Marine Coating Specification 1/02 unless otherwise specified in the following specifications

12. PREPARATION OF VESSEL HULL FOR BLASTING

{MAINTENANCE}

NOTE:

Care shall be taken to avoid damage to the "CAPAC" anodes and reference cell.

A. Install protective covering on propellers, shaft seals, propeller bearings, exposed shafting, upper and lower rudder bearing areas, pintle pin bushing, CAPAC anodes and reference cell, all through-hull penetrations, sea valves, and entrance ways to protect and prevent grit blast material from causing damage or entering Vessel. Prior to any grit blasting the Contractor shall conduct a cover up inspection with the WSF Inspector and the Vessel Staff Chief Engineer.

B. Upon completion of hull grit blasting and removal of cover up material, conduct an inspection in the presence of the WSF Inspector and the Vessel Staff Engineer.

13. BLASTING OF THE GUARD AND ANTI-CORROSION COATING

{MAINTENANCE}

NOTE:

For purposes of bidding assume that **600 Square Feet** of the Guard will require grit blasting to SSPC-SP6, Commercial Blast Cleaning. Upon completion of the grit blast, the Contract will be adjusted upward or downward to account for the actual scope of grit blasting authorized by the WSF Inspector.

NOTE:

The Contractor shall have the option to UHP-WJ4, Ultrahigh-Pressure Water Jetting only if the hull profile is taken and is within the required profile in **Attachment No. 1** and approved by the WSF Inspector.

A. Grit blast areas of abrasion and corrosion on the horizontal and vertical surfaces (top, bottom, and side) of the guard, as authorized by the WSF Inspector, to an SSPC-SP6, Commercial Blast Cleaning.

- 1 B. The coating, for at least two inches (2") bordering the blasted area, shall be
2 feathered to a smooth surface.
- 3 C. Apply one (1) coat of INTERNATIONAL Intertuf 262 Series epoxy, Red, to a
4 minimum of 5 mils (DFT) to all prepared surface areas repaired in this Item.
- 5 D. Apply one (1) coat of INTERNATIONAL Interguard 267, Buff, to a
6 minimum of 5 mils (DFT) of contrasting color to all surfaces painted in
7 paragraph "C" of this Work Item.

8 **14. PAINTING OF VESSEL GUARD, FULL COAT**
9 {MAINTENANCE}

- 10 A. Apply one (1) coat of INTERNATIONAL Intercare 755, Black, to a minimum
11 of 2 mils (DFT) to all surfaces of the Guard (top, bottom and side).

12 **15. BLASTING OF THE HULL BELOW THE GUARD AND ANTI-**
13 **CORROSION COATING**
14 {MAINTENANCE}

15 **NOTE:**

16 For purpose of bidding assume that **7,000 Square Feet** of hull below the guard will
17 require grit blasting to SSPC-SP6, Commercial Blast Cleaning. Upon completion of
18 the grit blasting, the Contract will be adjusted upward or downward to account for the
19 actual scope of blasting authorized by the WSF Inspector.

20 **NOTE:**

21 The Contractor shall have the option to UHP-WJ4, Ultrahigh-Pressure Water Jetting
22 only if the hull profile is taken and is within the required profile in **Attachment No. 1**
23 and approved by the WSF Inspector.

- 24 A. Blast areas of abrasion, corrosion, and steel repairs from bottom of guard to
25 the keel; including flat keel, sea chests, strainer plates and rudders, to an
26 SSPC-SP 6, Commercial Blast Cleaning, as authorized by the WSF Inspector.
- 27 B. The coating, for at least two inches (2") bordering the blasted area, shall be
28 feathered to a smooth surface.
- 29 C. Apply one (1) coat of INTERNATIONAL Intertuf 262 Series epoxy, Red, to a
30 minimum of 5 mils (DFT) to all prepared surface areas repaired in this Item.
- 31 D. Apply one (1) coat of INTERNATIONAL Interguard 267, Buff, to a
32 minimum of 5 mils (DFT) of contrasting color to all surfaces painted in
33 paragraph "C" of this Work Item.

34 **16. PAINTING OF VESSEL HULL, ABOVE WATERLINE**
35 {MAINTENANCE}

36 **NOTE:**

1 For bidding purposes assume that **2,000 Square Feet** of the hull will require
2 TOPCOATING. The contract will be adjusted upward or downward using the square
3 footage determined in Grit Blasting of the Hull Item.

4 A. Apply one (1) coat of INTERNATIONAL Intercare 755, WSF Green, to a
5 minimum of 2 mils (DFT) to all surfaces painted above the Waterline.

6 **17. PAINTING OF VESSEL HULL, BELOW WATERLINE**
7 **ANTI-FOULING (SPOT COAT)**
8 {MAINTENANCE}

9 **NOTE:**

10 For purpose of bidding assume that **5,000 Square Feet** of the hull will require the
11 FIRST coat of ANTI-FOULING coating. The contract will be adjusted upward or
12 downward using the square footage determined in Grit Blasting of the Hull Item.

13 A. Apply one (1) coat of INTERNATIONAL Interspeed Anit-fouling, BRA 640
14 RED, to a minimum of 4 mils DFT to all surfaces painted below the waterline
15 in the Blasting of the hull and Anti-Corrosion Coating Item.

16 **18. PAINTING OF VESSEL HULL, BELOW WATERLINE,**
17 **ANTI-FOULING (FULL COAT)**
18 {MAINTENANCE}

19 A. Apply one (1) full coat of INTERNATIONAL Interspeed Antifouling 642,
20 black, to a minimum of 6 mils (DFT) to all surfaces of hull below the
21 waterline.

22 **19. DRAFT AND HULL MARKINGS**
23 {MAINTENANCE}

24 A. Paint all draft marks and underwater hull markings, using INTERNATIONAL
25 Interlux Y5584, Shark White.

26 **20. CAPASTIC REPAIR**
27 {MAINTENANCE}

28 A. Repair any areas of failed capastic around the CAPAC anodes using
29 'Capastic' epoxy troweling compound made by ELECTROCATALYTIC,
30 INC. The capastic shall be applied to a minimum thickness of 1/8 inch in the
31 area of the shield out from the faired in area around the anode.

1 **NOTE:**
2 For bidding purposes, assume that **25 Square Feet** of failed capastic will require
3 repair. The Contract will be adjusted upward or downward to account for the actual
4 application of Capastic authorized by the WSF Inspector.

5 **NOTE:**
6 B. Build up a minimum of 22 mils (DFT) of epoxy Anti-Corrosion Coating over
7 the repaired capastic areas and the secondary dielectric shield areas.

8 **21. TREATMENT TANK REPLACEMENT OF COVER PLATE STUDS**
9 **{MAINTENANCE}**

- 10 A. Remove existing man hole cover and studs on the treatment tank and replace
11 with new stainless studs, eighty-eight (88), washers, eighty-eight (88) and
12 nuts eighty-eight (88), grade 314 stainless steel. Clean threads and thread
13 holes in all stud holes to ensure new studs will thread in and fit properly.
- 14 B. Reinstall covers with Contractor furnished new gaskets and grommets; and,
15 after painting as described in Item 22.

16 **NOTE:**
17 For purposes of bidding assume that **25 Square Feet** of the Treatment Tank,
18 including cover plates, will require SSPC-SP 3, Power Tool Cleaning. The Contract
19 will be adjusted upward or downward to account for the actual scope authorized by
20 the WSF Inspector.

21 C. Prepare all areas interior and exterior to an SSPC-SP 3, Power Tool Cleaning.

22 D. Apply two (2) coats of INTERNATIONAL Intertuf 262 Series epoxy, buff
23 first coat, Red second coat, at a minimum of 5 mils (DFT) each coat, to all
24 prepared surface areas repaired in this Item (include studs, washer and nuts).

25 E. Inspect for water leakage prior to launching. Any leakage will be repaired at
26 the Contractor's expense.

27 **22. INSPECTION OF NO. 1 AND NO. 2 END COOPER BEARINGS**
28 **{MAINTENANCE}**

29 **NOTE:**
30 There are two (2) Cooper Bearings per End. The after Bearing is a conventional
31 pedestal mounted Bearing. The forward Bearing is integral with a watertight
32 bulkhead seal.

33 A. Inspection of bearing for proper bearing alignment and condition. Provide
34 three (3) copies of a written report of findings to the WSF Inspector within the
35 first three (3) days of arrival at the Contractor's facility.

1 **23. NO. 1 AND NO. 2 END COOPER BEARINGS**

2 {MAINTENANCE}

3 **NOTE:**

4 Depending on conditions found in Item 22, this item may be initiated or deleted.
5 Include this work in the original work schedule of this Contract.

6 A. Remove and replace the No. 1 and No. 2 End Line Shaft Cooper bearings
7 (two (2) on each end) with WSF furnished Cooper bearings, List of Materials
8 Items 7 and 8, as shown on **Attachment No. 3**, WSF Dwg. No. 6605-203-02,
9 titled "Propulsion shafting Arrg't & Dets., Rev. E, dtd 8/25/71.

10 **NOTE:**

11 Item 7 is a split Flange bearing Cooper HFL-1300-EXOG, 13"I.D. and Item 8 is a
12 split, Pillowblock Bearing, Cooper, HSP_1300-EXOG, 13"I.D.

13 B. Prior to removal and after installing new bearings take alignment readings to
14 ensure proper alignment of new bearings in presence of WSF Inspector and
15 Vessel Staff Chief Engineer. Provide three (3) copies of alignment readings
16 to the WSF Inspector.

17 C. Inspection of the new bearings and components shall be accomplished prior to
18 installing bearings in the presence of the WSF Inspector and the Vessel Staff
19 Chief Engineer. Submit three (3) copies of a written report of the Inspection
20 findings to the WSF Inspector.

21 D. Remove existing bearing and replace with WSF furnished bearings. Pack the
22 bearings to the manufacturer's recommendations with WSF furnished grease

23 E. Reassembly and final tightening shall be to the manufacturer's
24 recommendations and witnessed by the WSF Inspector and Vessel Staff Chief
25 Engineer.

26 F. Transport the removed bearings to the WSF Warehouse at 6th Ave. South,
27 Seattle, WA. Inform the WSF Inspector twenty-four (24) hours prior to
28 transporting them. Provide the WSF Inspector with three (3) copies of the
29 inventory list of transported equipment.

1 **24. INSTALLATION OF WALKOFF MATS**
2 { MAINTENANCE }

ASBESTOS WARNING

Existing deck tile, underlayment, and joiner panels contain asbestos of varying amounts. Tile, underlayment, and joiner panel removals shall be accomplished by licensed personnel in accordance with current Federal, Local and State Environmental Regulations. Removed materials shall be disposed of in accordance with current Federal, Local and State regulations.

- 3 A. Install WalkOff Mats as shown on **Attachment No. 4**, Dwg. "WalkOff Mat
4 Detail".
- 5 B. Remove all interferences as required, including but not limited to newspaper
6 racks, brochure racks, waste receptacles, seating, tables, vending machines
7 and video games as **Category "C"** and provide secure, heated, dry storage for
8 these Items.
- 9 C. Remove and dispose of all the existing tile and underlayment in both No. 1
10 and No. 2 End Lower Passenger Cabins adjacent to the four (4) pickle fork
11 doors extending 3 feet beyond the door frames in the athwart ships directions
12 and eight feet (8') from the doors in the longitudinal direction as laid out by
13 the WSF Inspector. Enclose area to be blasted to prevent the contaminants of
14 this work going to the surrounding area, this includes the overhead and
15 venting.
- 16 D. Prepare the decks to SSPC-SP6, Commercial Blast Cleaning with track
17 blaster. Remove all traces of blast beads from all areas of the Vessel.
- 18 E. All areas that are inaccessible to a track blaster shall be prepared to SSPC-
19 SP3, Power Tool Cleaning.
- 20 F. Apply two (2) coats of International Intertuf 262 at 3 mils (DFT) each coat,
21 to a total minimum of 6 mils (DFT) to all areas prepared areas in this Item.
- 22 G. Install new underlayment in all areas of removed underlayment. The new
23 underlayment shall provide A-30 structural fire protection. The underlayment
24 is to be asbestos free and USCG approved. The underlayment system shall be
25 Poly-Spec 7K or equal as approved by the WSF Inspector.
- 26 H. Second coat shall be applied to smooth hollows, low spots and other
27 imperfections in the first coat of underlayment. Where a difference in height
28 exists in way of doors to adjacent spaces the underlayment shall transition
29 eight-teen (18") and be gradually ramped down to the low area. When the
30 underlayment is sufficiently dry, sand out the trowel ridges to provide a
31 smooth surface for tile installation. No trowel ridges shall show through the
32 tile within one (1) year of installation.

- 1 I. Apply a full “skim coat” of PolySpec Lite Latex, or Ardex Feather Finish or
2 an approved equal to the entire deck area being tiled. The skim coat shall
3 provide a level and smooth surface for tile application. The Contractor shall
4 warrant that the skim coat will not de-laminate from the underlayment, crack,
5 or bubble during the warranty period. All or equal substitutions shall be
6 approved by the WSF Inspector. The finished deck surface shall be flush with
7 all doorsills and faired to account for deck camber.
- 8 J. Coat underlayment under walk off mats and for one (1) tile width around the
9 perimeter with epoxy sealer to make the underlayment waterproof.
- 10 K. The walk off mat shall be sized to extending two feet (2’) beyond the door
11 frames in the athwart ships directions and six feet (6’) from the doors in the
12 longitudinal direction as laid out by the WSF Inspector.
- 13 1. The walk off mats shall be Bonar Floors Coral Duo-Graphite 9110.
- 14 2. The mats shall be flush with the existing tile and be laid with the ribs
15 running at right angles to the walking direction.
- 16 3. The mats shall be removable and flush with the existing tile.
- 17 4. Install walk off mat stainless steel transition strips with removable
18 rubber flat top flush with the existing tile and capturing the outer
19 perimeter of the mats.
- 20 5. Install new tile to match existing to all areas that were disturbed and
21 that have not received a walk off mat.

22 **25. DATA LOGGING STEERING SYSTEM**

23 {MAINTENANCE}

24 **NOTE:**

25 Wherever new penetrations are required they shall maintain the watertight and fire
26 ratings of the bulkhead or deck being penetrated. Existing non-poured bulkhead and
27 deck penetrations may be reused. New Multi-Cable Transits shall be Nelson type.
28 Test all deck, bulkhead and hull penetrations in company with and to the satisfaction
29 of the USCG and WSF Inspector, and the Staff Chief Engineer.

- 30 A. Provide the Services of Mathews Marine (503-288-7493) to install a steering
31 IBA Data Logging System. Installation will include a PC work Station,
32 fifteen feet (15") flat panel display with wireless keyboard and mouse. The
33 system will be interfaced with the existing steering and propulsion controls.
34 Mathews Marine will provide all equipment and the installation. Use new
35 wire ways installed under other ITEMS of this Specification and existing wire
36 ways to run the cables.

- 1 B. Install new cabling and termination, and plugging of Cat 5 and coax cabling
2 as required using **Attachment No. 5**, Cable Sketch, as guidance. Install new
3 cable runs and hangers as required, existing runs may be use if there is enough
4 space and able to maintain proper cable separation.
- 5 C. Insure cables and wires are run and marked, and continuity tests are made in
6 accordance with **Attachment No. 6**, WSF ELECTRICAL MODIFICATION
7 SPECIFICATION.
- 8 D. Provide the services of a Manufacturer's Technical Representative to test,
9 commission and demonstrate the installation to the WSF Inspector and the
10 Vessel Staff Chief Engineer.
- 11 E. Prepare all surfaces affected by this work to an SSPC-SP3, Power Tool
12 Cleaning. Apply one (1) coat of International Intertuf 262, to obtain a
13 minimum of 6 mils (DFT) to all surfaces affected by this work. Hand stripes
14 all edges. Where required, Top-coat with International Intercare 755, to
15 obtain a minimum of 2 mils (DFT), to match surrounding surfaces.

16 **26. DECK HATCH DRAIN INSTALLATION**

17 {MAINTENANCE}

- 18 A. Install Deck Hatch Drains in the No. 1 and No. 2 End Steering Deck Hatches
19 using **Attachment No. 7**, WSF Dwg. No. 8100X-566-11-1, Rev A, titled
20 JUMBO CLASS, Deck Hatch Drain; dated 3/13/02, as guidance.

21 **NOTE:**

22 Clean and gas free and obtain a Marine Chemist certificate for "SAFE FOR
23 WORKERS" and "SAFE FOR HOT WORK" for all areas that require Welding.
24 Maintain the certification during the course of the work required in this item.

- 25 B. All welding shall be inspected and tested for cracks, water leaks and any other
26 defects. Method of testing and testing results shall be witness and accepted by
27 WSF and USCG Inspectors.
- 28 C. Galvanize all new installed piping and fittings; and paint all exterior
29 Galvanized surfaces as describe in **Attachment No. 1**.
- 30 D. For hull and other interior areas: Apply two (2) coats of International Intertuf
31 262 to obtain a minimum of 6 mils (DFT) each coat, to all areas effected in
32 this Item.
- 33 E. Hull External areas will be prepared and painted as part of Items 15 and 16.

34
(END)